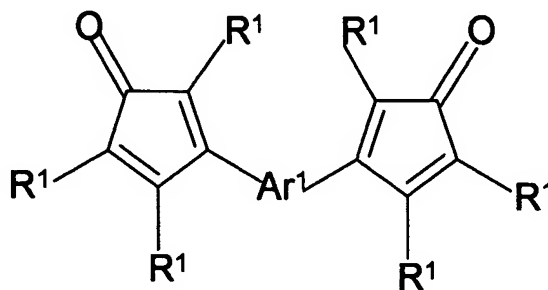


WHAT IS CLAIMED IS:

1. A process of removing impurities from a cured low dielectric constant organic polymeric film disposed on a semiconductor device comprising disposing a low dielectric constant curable organic polymeric film on an electrically conductive surface of a semiconductor device; curing said organic polymeric film disposed on said semiconductor device; and contacting said cured organic polymeric film with supercritical carbon dioxide and, optionally, one or more solvents.
2. A process in accordance with Claim 1 wherein said cured low dielectric constant organic polymeric film is a polyarylene resin.
3. A process in accordance with Claim 2 wherein said polyarylene resin is formed from a precursor composition which comprises a compound having cyclopentadiene functional groups, acetylene functional aromatic compounds and/or partially polymerized reaction products of said compounds.
4. A process in accordance with Claim 3 wherein said compound having biscyclopentadienone functional groups is a biscyclopentadienone of the formula



where R¹ is independently hydrogen or an unsubstituted or inertly substituted aromatic moiety; and Ar¹ is an unsubstituted or inertly substituted aromatic moiety; and said acetylene functional aromatic compound is a polyfunctional acetylene of the formula



where R^2 is independently hydrogen or an unsubstituted or inertly substituted aromatic moiety; Ar^3 is an unsubstituted or inertly substituted aromatic moiety; and y is an integer at least 3.

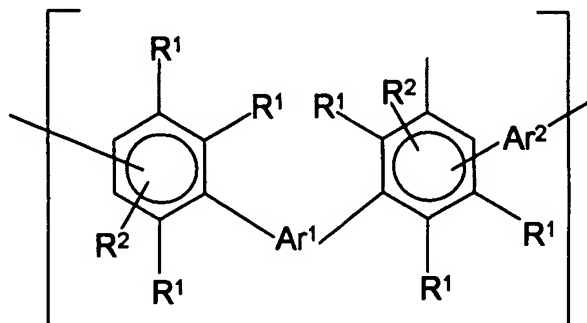
5. A process in accordance with Claim 4 wherein said precursor composition includes a diacetylene of the formula



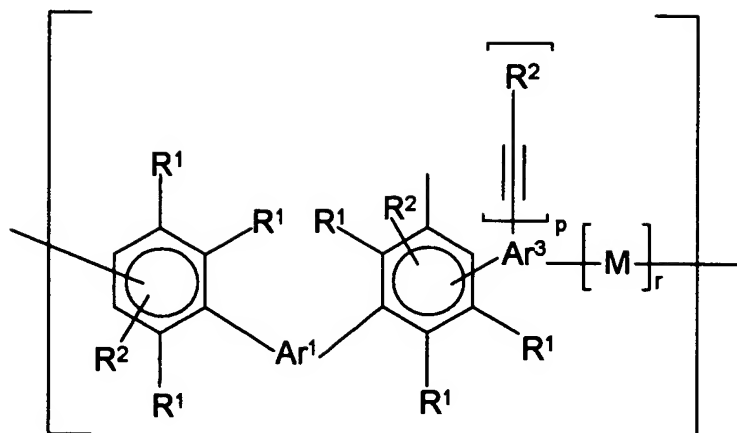
where Ar^2 is an unsubstituted or inertly substituted aromatic moiety; and R^2 has the meanings given above.

6. A process in accordance with Claim 4 wherein said precursor composition comprises a curable polymer of the formula $[A]_w[B]_z[EG]_v$

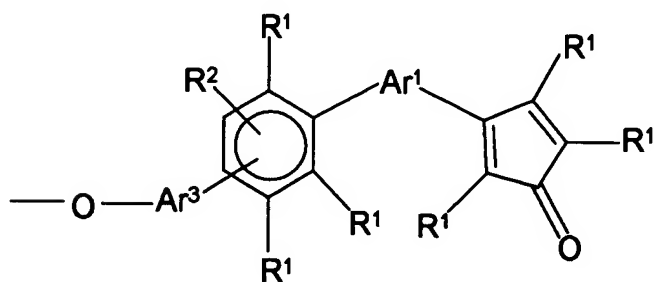
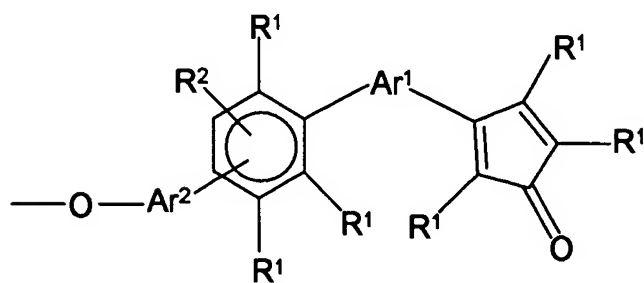
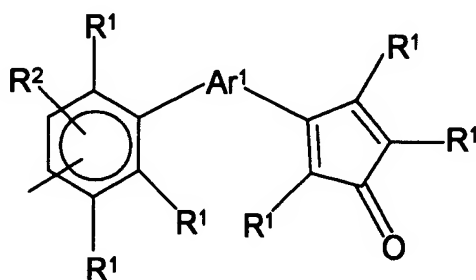
where A has the structure

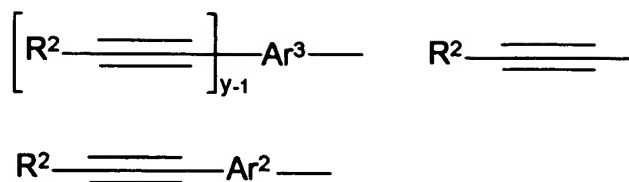


B has the structure



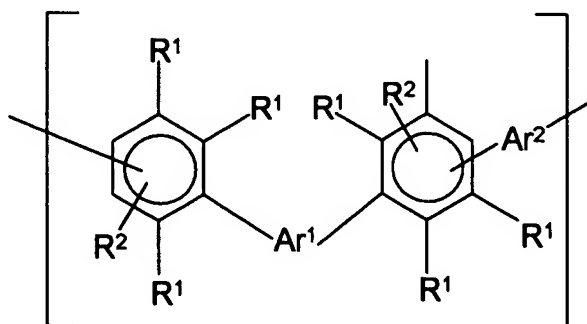
and EG are end groups having a formula



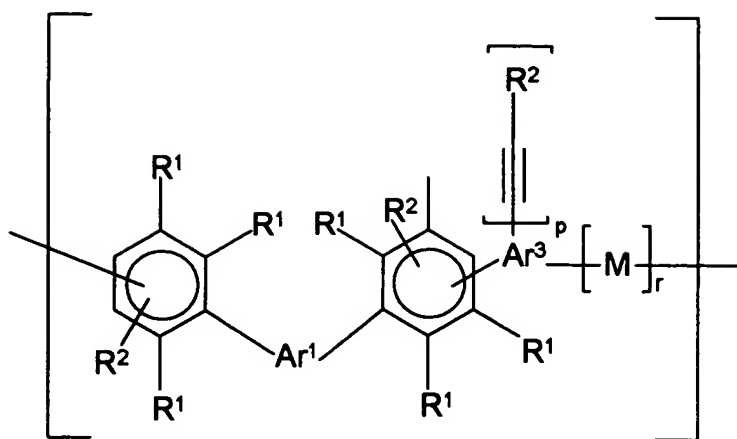


where R^1 , R^2 , Ar^1 , Ar^3 and y have the meanings given above; M is a bond; p is the number of unreacted acetylene groups in the given mer unit; r is 1 less than the number of reacted acetylene groups in the given mer unit, with the proviso that $p+r=y-1$; w is an integer of 0 to about 1,000; z is an integer of 1 to about 1,000; and v is an integer of at least 2.

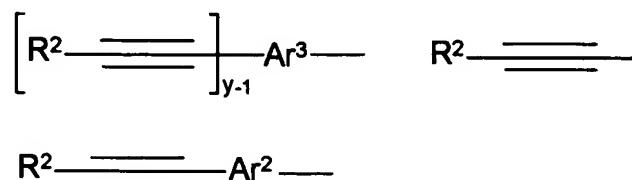
7. A process in accordance with Claim 5 wherein said precursor composition comprises a curable polymer of the formula $[\text{A}]_w[\text{B}]_z[\text{EG}]_v$ where A has the structure



B has the structure



and end groups EG have the formula



where R^1 , R^2 , Ar^1 , Ar^2 , Ar^3 and y have the meanings given above; M is a bond; p is the number of unreacted acetylene groups in the given mer unit; r is 1 less than the number of reacted acetylene groups in the given mer unit, with the proviso that $p+r=y-1$, w is an integer of 0 to about 1,000; z is an integer of 1 to about 1,000; and v is an integer of at least 2.

8. A process in accordance with Claim 1 wherein said low dielectric constant organic film is a poly(silsesquioxane).

9. A process in accordance with Claim 8 wherein said poly(silsesquioxane) is poly(methylsilsesquioxane).

10. A process in accordance with Claim 8 wherein said poly(silsesquioxane) is poly(hydridosilsesquioxane).

11. A process in accordance with Claim 9 wherein said poly(methylsilsesquioxane) is cured at a temperature of up to about 450°C.
12. A process in accordance with Claim 10 wherein said poly(hydridsilsesquioxane) is cured at a temperature of up to about 210°C.
13. A process in accordance with Claim 1 wherein said organic polymeric film is an interlevel or intralevel dielectric in said semiconductor device.
14. A process in accordance with Claim 1 wherein said supercritical carbon dioxide contacts said cured low dielectric constant organic polymeric film with at least one solvent.
15. A process in accordance with Claim 14 wherein said solvent is selected from the group consisting of cyclohexanone, methylisobutylketone, mesitylene, alcohols having the structural formula ROH, where R is C₄-C₁₀ alkyl or C₅-C₁₀-cycloalkyl, and C₅-C₈ cycloalkyls.
16. A process in accordance with Claim 15 wherein said solvent is present in a concentration in a range of between about 1% and about 80%, said percentages being by volume, based on the total volume of said supercritical carbon dioxide-solvent composition.
17. A process in accordance with Claim 16 wherein said solvent is present in a concentration in a range between about 1% and about 50%.